CONTENTS

List of committees ix

Sponsors xi

Preface xiii

Conference photo xv

Opening talk

Trends in nuclear physics
A. Richter 3c

Nuclei, the Standard Model and beyond

Evidence for neutrino oscillations—I: Solar and reactor neutrinos
A.B. McDonald 53c

Evidence for neutrino oscillations—II: Atmospheric and accelerator neutrinos
K. Nakamura 67c

Fundamental symmetries and interactions
K.P. Jungmann 87c

Relativistic heavy ions

Collective expansion in high-energy nuclear collisions—the search for the partonic EOS at RHIC
N. Xu 109c

Relativistic nuclear collisions and the QCD phase boundary
P. Braun-Munzinger 127c

Hot and dense QCD matter
J.-P. Blaizot 139c

Hadronic structure

Modern theory of nuclear forces
U.-G. Meißner 149c

Electron scattering and hadron structure
E.J. Beise 167c

Deep virtual Compton scattering and the nucleon generalized parton distributions
M. Guidal 180c

Nuclear structure

Citius, Altius, Fortius—a quest for new phenomena in nuclei far from stability
M. Lewitowicz 195c

The contribution of precision mass measurements to nuclear physics
C. Scheidenberger 209c

New developments in the study of few-nucleon systems
M. Viviani, A. Kievsky, L.E. Marcucci and S. Rosati 226c

Nuclear structure at the limits: Continued exploration with gammasphere
R.V.F. Janssens 244c

Structure and decay properties of the heaviest elements
M. Leino 248c

Nuclear structure far from stability
D. Vretenar 264c

Nuclear astrophysics

Experimental challenges in nuclear astrophysics
M. Wiescher 285c

Nuclear physics: A key ingredient in astrophysical modeling
F.-K. Thielemann, D. Argast, F. Brachwitz, J.L. Fisker, C. Fröhlich, R. Hirschi, E. Kolbe, D. Mocelj and T. Rauscher 301c

Nuclear physics concepts in other fields

Symmetry in nuclei and beyond
F. Iachello 329c

Quantum chaos
O. Bohigas 343c

Cold quantum gases: Coherent quantum phenomena from Bose–Einstein condensation to BCS pairing of fermions
G. Baym 373c

Nuclear physics and society

Nuclear physics and archaeometry
P.A. Mandò 393c

Nuclear physics applications in diagnostics and cancer therapy
U. Amaldi 409c

Future scenarios for fission based reactors
S. David 429c

Prospects for fusion
C.H. Llewellyn Smith 442c

Nuclear waste incineration and accelerator aspects from the European PDS-XADS study
A.C. Mueller 453c

The thrill of discovery: Nuclear physics research in the 21st century
J.S. Al-Khalili 469c

Future directions of nuclear physics

Through the looking glass: Probing the nucleus using accelerated radioactive beams
P.A. Butler 485c

Chemical evolution of the Universe and the role of radioactive nuclear beams
B.M. Sherrill 494c

Trends in experimental studies of exotic nuclei
A.A. Korsheninnikov 501c

Quantum Monte Carlo calculations of light nuclei
S.C. Pieper 516c

Future perspectives in nuclear structure: From high intensity stable to radioactive nuclear beams
G. de Angelis 533c

Future directions in studying QCD aspects of nuclear physics
G. van der Steenhoven 552c

Nucleons and nuclei in the context of low-energy QCD
W. Weise 565c

Hot and dense QCD: Theories and experiments
T. Hatsuda 583c

Ups and downs, and the strange charm of roadmaps
W. Henning 593c

Conference program 605c

List of participants 629c

Author index 651c

CONTENTS direct

This journal is part of **ContentsDirect**, the ***free*** alerting service which sends tables of contents by e-mail for Elsevier books and journals. You can register for **ContentsDirect** online at: **http://contentsdirect.elsevier.com**

Available online at www.sciencedirect.com
SCIENCE DIRECT
ELSEVIER
Nuclear Physics A 751 (2005) 651c–652c
NUCLEAR PHYSICS A

Author index

Al-Khalili, J.S., The thrill of discovery: Nuclear physics research in the 21st century **A751** (2005) 469c

Amaldi, U., Nuclear physics applications in diagnostics and cancer therapy **A751** (2005) 409c

Argast, D., see Thielemann, F.-K. **A751** (2005) 301c

Baym, G., Cold quantum gases: Coherent quantum phenomena from Bose–Einstein condensation to BCS pairing of fermions **A751** (2005) 373c

Beise, E.J., Electron scattering and hadron structure **A751** (2005) 167c

Blaizot, J.-P., Hot and dense QCD matter **A751** (2005) 139c

Bohigas, O., Quantum chaos **A751** (2005) 343c

Brachwitz, F., see Thielemann, F.-K. **A751** (2005) 301c

Braun-Munzinger, P., Relativistic nuclear collisions and the QCD phase boundary **A751** (2005) 127c

Butler, P.A., Through the looking glass: Probing the nucleus using accelerated radioactive beams **A751** (2005) 485c

David, S., Future scenarios for fission based reactors **A751** (2005) 429c

de Angelis, G., Future perspectives in nuclear structure: From high intensity stable to radioactive nuclear beams **A751** (2005) 533c

Fisker, J.L., see Thielemann, F.-K. **A751** (2005) 301c

Fröhlich, C., see Thielemann, F.-K. **A751** (2005) 301c

Guidal, M., Deep virtual Compton scattering and the nucleon generalized parton distributions **A751** (2005) 180c

Hatsuda, T., Hot and dense QCD: Theories and experiments **A751** (2005) 583c

Henning, W., Ups and downs, and the strange charm of roadmaps **A751** (2005) 593c

Hirschi, R., see Thielemann, F.-K. **A751** (2005) 301c

Iachello, F., Symmetry in nuclei and beyond **A751** (2005) 329c

Janssens, R.V.F., Nuclear structure at the limits: Continued exploration with gammasphere **A751** (2005) 244c

Jungmann, K.P., Fundamental symmetries and interactions **A751** (2005) 87c

Kievsky, A., see Viviani, M. **A751** (2005) 226c

Kolbe, E., see Thielemann, F.-K. **A751** (2005) 301c

Korsheninnikov, A.A., Trends in experimental studies of exotic nuclei **A751** (2005) 501c

Leino, M., Structure and decay properties of the heaviest elements **A751** (2005) 248c

0375-9474/2005 Published by Elsevier B.V.
doi:10.1016/S0375-9474(05)00285-X

Lewitowicz, M., Citius, Altius, Fortius—a quest for new phenomena in nuclei far from stability **A751** (2005) 195c
Llewellyn Smith, C.H., Prospects for fusion **A751** (2005) 442c

Mandò, P.A., Nuclear physics and archaeometry **A751** (2005) 393c
Marcucci, L.E., see Viviani, M. **A751** (2005) 226c
McDonald, A.B., Evidence for neutrino oscillations—I: Solar and reactor neutrinos **A751** (2005) 53c
Meißner, U.-G., Modern theory of nuclear forces **A751** (2005) 149c
Mocelj, D., see Thielemann, F.-K. **A751** (2005) 301c
Mueller, A.C., Nuclear waste incineration and accelerator aspects from the European PDS-XADS study **A751** (2005) 453c

Nakamura, K., Evidence for neutrino oscillations—II: Atmospheric and accelerator neutrinos **A751** (2005) 67c

Pieper, S.C., Quantum Monte Carlo calculations of light nuclei **A751** (2005) 516c

Rauscher, T., see Thielemann, F.-K. **A751** (2005) 301c
Richter, A., Trends in nuclear physics **A751** (2005) 3c
Rosati, S., see Viviani, M. **A751** (2005) 226c

Scheidenberger, C., The contribution of precision mass measurements to nuclear physics **A751** (2005) 209c
Sherrill, B.M., Chemical evolution of the Universe and the role of radioactive nuclear beams **A751** (2005) 494c

Thielemann, F.-K., D. Argast, F. Brachwitz, J.L. Fisker, C. Fröhlich, R. Hirschi, E. Kolbe, D. Mocelj and T. Rauscher, Nuclear physics: A key ingredient in astrophysical modeling **A751** (2005) 301c

van der Steenhoven, G., Future directions in studying QCD aspects of nuclear physics **A751** (2005) 552c
Viviani, M., A. Kievsky, L.E. Marcucci and S. Rosati, New developments in the study of few-nucleon systems **A751** (2005) 226c
Vretenar, D., Nuclear structure far from stability **A751** (2005) 264c

Weise, W., Nucleons and nuclei in the context of low-energy QCD **A751** (2005) 565c
Wiescher, M., Experimental challenges in nuclear astrophysics **A751** (2005) 285c

Xu, N., Collective expansion in high-energy nuclear collisions—the search for the partonic EOS at RHIC **A751** (2005) 109c